2022 Fifth National Conference of Saudi Computers Colleges (NCCC 2022)

Makkah, Saudi Arabia 21-22 December 2022



IEEE Catalog Number: ISBN:

CFP22W21-POD 979-8-3503-3369-5

Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP22W21-POD
ISBN (Print-On-Demand):	979-8-3503-3369-5
ISBN (Online):	979-8-3503-3368-8

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400 Fax: (845) 758-2633 E-mail: curran@proceedings.com Web: www.proceedings.com





Table of Contents

Message from the Steering Chairsiii
Welcome from the Scientific Committeeiv
NCCC 2022 Organizing Committees ν
Conference Timetable
Keynotesx
Discussion Panelsxii
Workshopsxiii
Conference Websitexvi
Sponsors and Partnersxvi

Technical Papers

A New Machine Learning Framework for Detecting COVID-19 From Clinical Data on Lung And Heart Function .1
Ahmad A. Alzahrani, Bilal Bataineh, Hamoud H. Alshammari, Saeed Kabrah, Mohammed Baghdadi
Enhance the Aspect Category Detection in Arabic Language using AraBERT and Text Augmentation
Miada Ahmeddeb Almasre
Depression Detection Through Identifying Depressive Arabic Tweets From Saudi Arabia: Machine Learning
<u>Approach</u>
Norah Al-Musallam, Mohammed AlAbdullatif
EBSAR: Detecting of Objects that Hinder Visually Impaired in a Controlled Area Using Deep Learning
Ahd Aljarf, Ghaidaa Almaghrabi, Halah Albarakati, Haneen Ahmed, Raghad Alharbi, Sawsan
Aljuhani
A Restaurant Recommendation Engine Using Feature-based Explainable Matrix Factorization
Mohammed Sanad Alshammari
Using AI-SPedia to Study Saudi Universities' Research Outputs in the Artificial Intelligence Field
Yasser Maatouk





A 2-Layers Deep learning Based Intrusion Detection System for Smart Home	35
Tahani Gazdar, Helah Alqarni, Aljazy Bakhsh, Mariam Aljidaani, Mashael Alzahrani	
Utilizing Sentiment Analysis to Enhance the Quality of Online Learning	41
Shahd Ebrahim Alqaan, Ali Mustafa Qamar	
Using Machine Learning for Automatic Correction of Numerical Analysis Assignments Towards Sustainal	<u>ole</u>
Education Development	47
Ohud Abdullah Bukhari, Ashwag Omar Maghraby	
Istaqim: An Assistant Application to Correct Prayer for Arab Muslims	52
Huda Aziz Hassan, Halah Abdualrahman Qassas, Badriah Saad Alqarni, Rahaf Ibrahim Algh	uraibi,
Khadija Fahad Alghannam, Olfat Meraj Mirza	
Opinion Mining using Sentiment Analysis and Topic Modelling for an Entertainment Event	58
Esraa Samkari, Areej Alsini	
Detecting Hate Speech in Arabic Literature Tweets	64
Sara Marhaba, Afnan Alomairi, Fatma Heiba, Arwa Abdelrahman, Hatoon Alazwari, Areej	
Althubaity	
Application of Unsupervised Learning and Data Clustering to Saudi Online Stores	71
Mashael Alsahafi, Mohammed Nour, Ahmad Alhindi, Majed Farrash, Alya´a Bajoudah	
Your Mobile Phone Could Infer Your College Major Tendency	79
Fadi Habhab, Asim Alihabi, Ahmed Hawsawi, Ghassan F. Bati	
Security and Privacy Challenges in Big Data	82
Samiha Alarjani, Shakeel Ahmed	
An Overview of Securing SCADA Systems: the Gap in the Physical Security Measure	88
Abrar S. Alrefaei	
Fingerprint Presentation Attack Detection Algorithm	92
Alaa Alsubhi, Nawal Alsufyani	
Digital Forensics and Machine Learning to Fraudulent Email Prediction	99
Norah Al-Ghamdi, Tahani Alsubait	
Feature Selection based Universal Image Steganalysis : A Survey	107
Reem A. Badri, Manal A. Alghamdi, Ahd M. Aljarf	
Cryptographic Algorithms to Secure IoT Devices: A Survey	115
Amgad A. Muthan, Fatimah M. Alburaiki, Sumayah A. Alwadei, Mohammed S. Alsheri	
Predicting Cyber Threats Using Machine Learning for Improving Cyber Supply Chain Security	123
Areej Omar Al Ansari, Tahani Mohammed Alsubait	

ЖЖЖ

21

ZN

 Δ

 $2\mathbf{N}$





Solving Food Wastage issues through BYOD application	131
Naeem A. Nawaz, Hamid Raza Malik	
Facilitate Access to Buildings Using a Navigation Mobile application	139
Foziah Gazzawe, Reem Alshekh, Alfahdah alsharif, Renad Tamimi, Aisha Ali, Najaib Almuqati	i,
Shaima Alharbi	
Maher: An Application for Supporting Autistic Children in Learning Self-Care Skills	144
Reem Al Ashaikh, Fatema Altawil, Ahlam Abdulshakur, Hanan Alsaedi, Razan Faqih, Asmaa B	larhmh
Protecting Digital Currency Transactions on Bitcoin Networks Against Delay-Based Attacks	149
Khaled Tarmissi, Atef Shalan, Abdullah Al Shahrani, Abdulbaset Gaddah, Saud S. Alotaibi	
A Literature Review of Bitcoin Network Infrastructure, Methodology, and Challenges	157
Khaled Tarmissi, Atef Shalan, Rayan Alsulamy, Sultan Almotiri, Abdulbaset Gaddah	
Improving Web Application Development Course	165
Natheer Khalif Gharaibeh	
Wireless Network Infrastructure for Electric Vehicles Communications: Khobar City as a Case Study	172
Mashbi Hassan Ibrahim, Baroudi Uthman	
Internet of things in textile sensors	177
Hattan Khaled Ballaji	
The Importance of Empowerment in Customer Service Management	182
Foziah Hassan Gazzawe, Rewaa Saeed Khalifah, Ranem Fawzi Organji, Maysem Mohammed	1 AI-
hazmi	
Generating New Arabic Letters-Rawashin Design using GAN	186
Rufaidah Ali Bagido	
Detect keyloggers by using Machine Learning	193
Sarah M. Alghamdi, Elham S. Othathi, and Bassma S. Alsulami	
Efficient Audio Encryption Using a Discrete Cosine Transform and Baker Map	201
Ghadah Alzeer, Hisham Alhumyani	
Author Index	209

 $2\mathbf{N}$

ZN

